

What is claimed is:

1. A method of detecting suspected anomalous shadows,  
comprising the steps of

obtaining radiation-image data representing a radiation  
5 image obtained of a target subject by an image obtaining means,

detecting, based on said obtained radiation image data,  
the suspected anomalous shadows contained within said radiation  
image by performing an anomalous shadow detection process  
utilizing a predetermined detection parameter, further comprising  
10 the steps of

obtaining phantom-image data representing a radiation image  
obtained by said radiation image obtaining means of a standard  
phantom having a shadow pattern formed of a plurality of evaluative  
models each of which corresponds to a different detection level,

15 outputting said obtained phantom image data by use of an  
output means, and

setting as the value of the detection parameter a threshold  
value obtained by performing an image quality evaluation based  
on the phantom-image data outputted by the output means.

20 2. A method of detecting suspected anomalous shadows as  
defined in claim 1, wherein the target subject is a breast.

3. A system for detecting suspected anomalous shadows,  
comprising

image obtaining means for obtaining a radiation image of  
25 a target subject,  
radiation-image data obtaining means for obtaining

radiation-image data representing the radiation image obtained by said image obtaining means of the target subject,

an anomalous shadow detecting means for detecting, based on the radiation-image data obtained by the radiation image data obtaining means, suspected anomalous shadows contained within the radiation image by performing an anomalous shadow detection process utilizing a predetermined detection parameter, wherein

10 said anomalous shadow detecting means determines, based on a phantom-image data representing a standard phantom-image having at least one type of anomalous shadow pattern formed of a plurality of evaluative models each of which corresponds to a different detection capability level, a threshold value facilitating the detection and obtainment of an evaluative model corresponding to a desired detection capability level,

15 and automatically sets the value of the detection parameter based on said threshold value.

4. A system for detecting suspected anomalous shadows as defined in claim 3, wherein

20 at least one of the patterns of anomalous shadows contained in the standard phantom is the pattern of the shadows of tumors.

5. A system for detecting suspected anomalous shadows as defined in claim 3, wherein

25 at least one of the patterns of anomalous shadows contained in the standard phantom is the pattern of the shadows of microcalcifications.

6. A system for detecting suspected anomalous shadows as

defined in any one of claims 3, 4, or 5, wherein  
said suspected anomalous shadow detection process comprises  
an iris filtering process for detecting tumors, and/or a morphology  
filtering process for detecting microcalcifications.

5       7. A system for detecting suspected anomalous shadows,  
comprising

image obtaining means for obtaining a radiation image of  
a target subject,

radiation-image data obtaining means for obtaining  
10 radiation data representing the radiation image obtained by said  
image obtaining means of the target subject,

an anomalous shadow detecting means for detecting, based  
on the radiation-image data obtained by the radiation image data  
obtaining means, suspected anomalous shadows contained within  
15 the radiation image by performing an anomalous shadow detection  
process utilizing a predetermined detection parameter, further  
comprising

a parameter setting means for automatically setting, based  
on the radiation-image data of a predetermined target subject  
20 that has been obtained by the radiation-image data obtaining means  
from a radiation image obtained thereof by the image obtaining  
means, the value of the detection parameter.

8. A system for detecting suspected anomalous shadows as  
defined in claim 7, wherein

25       the parameter setting means computes a granularity  
correction value, based on the granularity of the radiation-image

data of the predetermined target subject, and sets the value for the detection parameter based on said granularity correction value.

9. A system for detecting suspected anomalous shadows as  
5 defined in claim 7 or 8, wherein

the parameter setting means computes a contrast correction value, based on the granularity of the radiation-image data of the predetermined target subject, and sets the value for the detection parameter based on said contrast correction value.

10 10. A system for detecting suspected anomalous shadows as defined in claim 7 or 8, wherein

the predetermined target subject is a standard phantom having a pattern of anomalous shadows formed of a plurality of evaluative models each of which corresponds to a different 15 detection capability level.

11. A system for detecting suspected anomalous shadows as defined in claim 9, wherein

the predetermined target subject is a standard phantom having a pattern of anomalous shadows formed of a plurality of 20 evaluative models each of which corresponds to a different detection capability level.